CLASS SPECIFICATION
County of Fairfax, Virginia

CLASS CODE: 1822 **TITLE:** GIS SPATIAL ANALYST III **GRADE:** S-27

DEFINITION:
Under general supervision, provides guidance and direction on Countywide GIS initiatives across multiple agencies with multiple GIS projects. Develops and manages complex spatial projects to support GIS initiatives. Maintains high level of knowledge in all GIS tools, utilities, databases, and capabilities. Interfaces with agencies to determine appropriate GIS applications and methods to solve business problems. Leads Requirements Analysis process for new applications. Develops and implements user applications for GIS; and performs related work as required.

DISTINGUISHING CHARACTERISTICS:
This is an advanced level and is distinguished from the GIS Spatial Analyst II by at least one of the following factors: supervisory responsibility; project management responsibility; high level spatial analysis skills like GIS network modeling or synthesis skills like advanced data layer merging using map algebra; high level GIS skills exploiting the spatial capabilities of GIS-oriented tools, utilities, databases, and other associated technology; high level spatial application development skills. Incumbents perform complex GIS analysis tasks; may supervise lower level analysts, and refer more complex problems to the supervisor or Senior GIS Spatial Analyst IV. The GIS Spatial Analyst III develops spatially based solutions for complex business problems (data and applications). The incumbent also provides guidance and direction in GIS modeling on agency projects. In addition to exceeding the characteristics of the GIS Analyst II, the incumbent's knowledge of GIS utilities and technical capabilities is well developed. The GIS Spatial Analyst III also provides detailed technical training in spatial analysis techniques to Agency staff across the County.

ILLUSTRATIVE DUTIES:
Identify, design, develop and conduct spatial solutions/models to complex business problems for users;
Creates/develops solutions for GIS systems (data, applications);
Conducts data modeling;
Guides GIS project personnel;
Performs project management duties for spatial system development and implementation;
Establishes standards and methods for developing GIS application software; database development and operation;
Effectively participates and collaborates in cross-departmental teams.
Develops documents and maintains data loading tools and processes;
Develops and conducts advanced spatial queries in GIS data warehouse (e.g., with Oracle Spatial);
Performs all stages of the System Development Life Cycle (SDLC), and applies relevant tasks and deliverables of the SDLC to GIS projects;
Defines system/database requirements for spatial applications;

Develops and performs enterprise level acceptance tests for GIS hardware and software;
Utilizes IT Information Library (ITIL) and other relevant County standards on system projects;
Provides training, guidance and assistance to lower level analysts;
Designs, develops, conducts and implements training programs and classes;
Provides technical support for complex system level problems;
Evaluates, designs, and implements spatial data models;
Serves on Selection Advisory Committee/Technical Advisory Committee to evaluate proposals submitted in response to Request for Proposals;
Formulates detailed project plans and timelines;
Coordinates efforts between GIS staff, other County staff, and contractors;
Manages and leads the design and development of moderate to complex GIS applications;
Provides technical assistance in data layer maintenance procedures;
Communicates with agency GIS leaders to assess needs and develop priorities;
Provides input to the GIS Spatial Analyst IV to help determine assignments of GIS resources to project initiatives;
Coordinates with County agencies in providing connectivity between the GIS database and County enterprise databases;
Provides GIS Liaison and coordination with neighboring jurisdictions and state agencies.
Assists agencies with technical hardware and software resources required in a distributed environment;
May supervise, assign, and evaluate work for GIS Spatial Analyst Is, IIs and Technicians;
Provides assistance to other staff as needed;
Provides both technical and functional GIS presentations to Senior County Management, Board Members, and constituents;
Attends meetings and conferences related to GIS;
Performs any of the illustrative duties in support of the Emergency Operations Center (EOC);
Performs evaluation of suitability and capability, estimation and prediction, using spatial tools;
Performs any or all of the four traditional types of spatial analysis: spatial overlay and contiguity analysis, surface analysis, linear analysis, and raster analysis.

REQUIRED KNOWLEDGE, SKILLS AND ABILITIES:
Considerable knowledge of principles, practices, and methods related to systems such as Oracle, ARCGIS, and Access, and other GIS tools, utilities and databases;
Knowledge of advanced spatial modeling techniques such as GIS network modeling, surface modeling, and/or complex spatial analysis, and synthesis involving integrated use of multiple data layers, map algebra, etc;
Knowledge of constructing databases, developing normalized tables, and interfacing with different database systems such as Access data repositories;
Knowledge of GIS spatial application development techniques;
Knowledge of writing scripts such as SQL, Python, and various object oriented programming languages;
Knowledge of System Administration Techniques;
Knowledge of current spatial quality control functions in GIS;
Ability to manage small to medium sized projects;

Ability to perform advanced overlay analysis operations using both vector and raster tools to answer complex questions;
Ability to plan, organize, and coordinate the work of subordinate staff and staff in other agencies; Ability to develop and implement new and innovative methods, techniques, and procedures;
Ability to document and communicate system modifications and enhancements;
Ability to assist users in solving GIS systems and analytical problems;
Ability to translate technical terminology into terms understandable to management and employees;
Excellent oral and written communication skills;
Ability to establish and maintain effective business relationships.

EMPLOYMENT STANDARDS:
Any combination of education, experience and/or training equivalent to the following:
Bachelor's degree in geographic informational systems, geography, computer science or other fields related to GIS; PLUS
Two years of experience in the development or maintenance of relational data or relational databases, and/or in application design, development, implementation or maintenance.

CERTIFICATES AND LICENSES REQUIRED:
None.

REVISED: August 19, 2005
ESTABLISHED: May 24, 1999